

Environmental Protection Agency

§ 1066.410

(b) An emission test generally consists of measuring emissions and other parameters while a vehicle follows the drive schedules specified in the standard-setting part. There are two general types of test cycles:

(1) *Transient cycles*. Transient test cycles are typically specified in the standard-setting part as a second-by-second sequence of vehicle speed commands. Operate a vehicle over a transient cycle such that the speed follows the target values. Proportionally sample emissions and other parameters and use the calculations in 40 CFR part 86, subpart B, or 40 CFR part 1065, subpart G, to calculate emissions. The standard-setting part may specify three types of transient testing based on the approach to starting the measurement, as follows:

(i) A cold-start transient cycle where you start to measure emissions just before starting an engine that has not been warmed up.

(ii) A hot-start transient cycle where you start to measure emissions just before starting a warmed-up engine.

(iii) A hot running transient cycle where you start to measure emissions after an engine is started, warmed up, and running.

(2) *Cruise cycles*. Cruise test cycles are typically specified in the standard-setting part as a discrete operating point that has a single speed command.

(i) Start a cruise cycle as a hot running test, where you start to measure emissions after the engine is started and warmed up and the vehicle is running at the target test speed.

(ii) Sample emissions and other parameters for the cruise cycle in the same manner as a transient cycle, with the exception that the reference speed value is constant. Record instantaneous and mean speed values over the cycle.

§ 1066.407 Vehicle preparation and preconditioning.

This section describes steps to take before measuring exhaust emissions for those vehicles that are subject to evaporative or refueling emission tests as specified in the standard setting part. Other preliminary procedures may apply as specified in the standard-setting part.

(a) Prepare the vehicle for testing as described in 40 CFR 86.131.

(b) If testing will include measurement of refueling emissions, perform the vehicle preconditioning steps as described in 40 CFR 86.153. Otherwise, perform the vehicle preconditioning steps as described in 40 CFR 86.132.

§ 1066.410 Dynamometer test procedure.

(a) Dynamometer testing may consist of multiple drive cycles with both cold-start and hot-start portions, including prescribed soak times before each test phase. See the standard-setting part for test cycles and soak times for the appropriate vehicle category. A test phase consists of engine startup (with accessories operated according to the standard-setting part), operation over the drive cycle, and engine shutdown.

(b) During dynamometer operation, position a cooling fan that appropriately directs cooling air to the vehicle. This generally requires squarely positioning the fan within 30 centimeters of the front of the vehicle and directing the airflow to the vehicle's radiator.

(1) For vehicles with GVWR at or below 14,000 lbs, you may use either of the following cooling fan configurations:

(i) Use a fixed-speed fan to appropriately direct cooling air to the vehicle with the engine compartment cover open. The fan capacity may not exceed 2.50 m³/s. If you determine that additional cooling is needed to properly represent in-use operation, use good engineering judgment to increase the fan's capacity or use additional fans, subject to our approval.

(ii) Use a road-speed modulated fan system that achieves a linear speed of cooling air at the blower outlet that is within ± 3.0 mph (± 1.3 m/s) of the corresponding roll speed when vehicle speeds are between 5 and 30 mph (2.2 to 13.4 m/s), and within ± 6.5 mph (± 2.9 m/s) of the corresponding roll speed at higher vehicle speeds. The fan must provide no cooling air for vehicle speeds below 5 mph, unless we approve your request to provide cooling during low-speed operation based on a demonstration that this is appropriate to simulate cooling